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Authorised: Superintendent Built Environment Branch

ORG 2: Perimeter Vehicle Access

1. Intent

Suitable emergency vehicle access must be provided to and around the perimeter of a building so that firefighters can quickly and easily conduct firefighting operations from the most effective location.

2. Operational Requirement

The FES Commissioner requires the following:

i. Typically a building site must provide for a DFES fire appliance access way (to and around a building) with a minimum clear width of 3.5m and a minimum clearance height of 4.5m,

ii. For a National Construction Code (NCC) defined large isolated building (LIB) the perimeter vehicle access (PVA) dimensions must meet the deemed to satisfy provisions as a minimum. However, depending on the building's position on the site and exposures on adjacent lots, a greater width may be required,

iii. The PVA shall be constructed to withstand the load of a 30 tonne fire appliance and only all-weather pavements such as asphalt/bituminous concrete and concrete paving are acceptable,

iv. The PVA is to be clear at all times (i.e. gates, bollards, loading bays and boom gates must not hinder access.),

v. Any access way/PVA not leading directly to an exit (i.e. a dead end) should be no longer than 45m and provided with a turnaround area that prevents the need to perform multi-point turns,

vi. Where an LIB does not have sprinklers installed, the 6m wide PVA must be provided to all sides of the building and the inside edge of the PVA located at least 10 metres from the building,

vii. Where an LIB does have sprinklers installed, if the PVA is increased to 8m and the inside edge of the PVA located at 2 metres from the building, the PVA may be provided to only three sides of a four sided building.

Consultation with the DFES Built Environment Branch is required for any deviations from the points above or if clarification is required.

3. Reason

If firefighters cannot safely access all areas of the building, firefighting operations will be restricted and certain areas of the building unable to be searched and/or defended from increasing property and environmental damage.

Successful firefighting operations involving large and/or complex low-level buildings, largely depends on the ability of firefighters to position quickly and most appropriately considering environmental conditions (such as wind direction), the fire's location and the

adjacent people, property and environmental exposures requiring protection from fire, heat and smoke.

For example, where an LIB such as a large warehouse is constructed without sprinklers and becomes substantially involved in fire, the resulting radiant heat (for example 125 kW/m^2 could be received at 2.5 metres from a 50m x 6m wall) will prevent access of fire appliances and firefighters to all sides of a building. The same consequence is unlikely to occur with a fully compliant sprinkler system installation. Therefore, in recognising the benefit of a fully compliant sprinkler system, only three sides of access will be recognised as suitable - if and only if, the PVA is increased to 8m on the three sides. This provides for the suitable positioning and siting of an aerial fire appliance and suitable firefighter work area.

Without easy access and the ability to position fire appliances and firefighters effectively, delays in commencing firefighting operations may occur and additional firefighting resources required. These resources may not be immediately available due to the distance between fire stations, particularly in regional areas. The incident will then have the potential to be protracted and involve significant firefighting resources for an extended period. Reference should also be made to OR 4 *Water supply and access* and DFES technical notes.

4. Risk Management

DFES defines risk as: 'The threat that an event or activity adversely affects our ability to achieve business and operational objectives or the failure to exploit opportunities to maximise stakeholder value.'

In the event of a building fire, there is a *moderate* risk that the provision of poor emergency vehicle access way/PVA will:

i. allow unnecessary spread of fire through additional fire compartments of a building,
ii. present limitations on the ability of firefighters to access the location of the fire or trapped occupants,
iii. increase the extent of heat and smoke damage to the surrounding exposures including property and the environment,
iv. increase the detriment to public health.

The FES Commissioner's Operational Requirements are designed to manage the risk.

5. Resources

Additional DFES 'PVA' information for building owners, authorities having jurisdiction and fire safety practitioners is available in DFES technical notes and operational requirement documents:

https://www.dfes.wa.gov.au/regulationandcompliance/buildingplanassessment/pages/publications.aspx

6. References

DFES Enterprise Risk Management Procedure (2018) Version1, Enterprise Risk.

National Construction Code Series (as amended) Volume One Building Code of Australia 'Class 2 to 9 Buildings', Australian Building Codes Board, ACT, Australia.